Recommendations by the Quality Task Group (AKQ) (56:2024)

Reprocessing motor systems

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Motor systems have now become indispensable in everyday healthcare sector practices. Motor systems are used in different application areas, including:

- Orthopaedics and trauma surgery (e.g. drills, bone saws, shavers)
- Neurosurgery (e.g. craniotomy and trepanation)
- Oral and maxillofacial surgery [OMF]) and dentistry (transmission instruments, e.g. hand and angled pieces)
- Ophthalmology
- Cardiovascular and thoracic surgery (sternum saws)
- Ear, nose and throat (ENT)
- Gynaecology

MOTOR SYSTEMS are powered in different ways:

- electrically (battery or mains power supply) or
- using compressed air (compressed air vane motor, compressed air turbine)

MOTOR SYSTEMS are used in many different application areas.

This Recommendation, together with the manufacturer's instructions for use (IFU), is intended as guidance for the **FORMULATION OF STANDARD OPERATING PROCEDURES** (SOPs). It does not replace the manufacturer's reprocessing instructions.

This Recommendation is intended as guidance for the **FORMULATION OF STANDARD OPERATING PROCEDURES.**

The members of the Quality Task Group and experts from among the manufacturers are in agreement that, because of their complex design, **MOTOR SYSTEMS** should be classified as per the KRINKO/BfArM Recommendation* into semi-critical B or critical B groups. Semi-critical B devices should preferably be reprocessed using an automated process, while critical B group instruments must in principle be reprocessed in an automated process. Reprocessing comprises several steps:

MOTOR SYSTEMS should be classified into semi-critical B or critical B groups.

Collection of the devices after use/preparation at the site of use /transport to the reprocessing unit

Immediately after use, coarse soils should be removed and lumens flushed out. No protein fixing solutions or isotonic saline solutions should be used to that effect, giving preference instead to distilled water.

When collecting the used supplies, dismantle the **INDIVIDUAL MOTOR SYSTEM** components. Particular attention should be paid to ensuring that compressed air tubing materials or electrical cables are not placed on a tray together with sharp items. This could damage the insulation or the outer compressed air sheath. Likewise, avoid kinking and winding materials too tightly.

The individual **MOTOR SYSTEM COMPONENTS** should be dismantled.

Manual precleaning /preparation for cleaning

Motor systems usually have areas poorly accessible to water during automated reprocessing (e.g. bayonet fittings). Therefore, the manufacturer's reprocessing IFUs often contain detailed instructions for **MANUAL PRECLEANING**.

Often, **THE IFUs** give information on avoiding damage to the systems which can lead to high repair costs. These instructions should definitely be observed.

Many motor systems must not, for example, be immersed in a solution or exposed to ultrasound. In other cases, no cleaning pistols should be used for purging since, because of the pressure used, water could penetrate behind the seals and into the interior of the motor, causing corrosion.

MANUAL PRECLEANING is often necessary.
THE IFUs should definitely be observed.

Automated cleaning and disinfection /drying

The manufacturer's reprocessing IFU contains details on these e.g.:

*Hygiene requirements for processing medical devices, jointly compiled by the Commission for Hospital Hygiene and Infection Prevention at the Robert Koch Institute (KRINKO) and the Federal Institute for Drugs and Medical Devices (BfArM)

- Dismantling into individual components
- Storage in appropriate trays
- Use of closing caps
- Details of proper connection for flushing out lumens, if necessary with filters
- Specification of suitable cleaning products
- Specification of suitable programme

Drying, inspection, care and functional testing

It may be necessary to reduce the pressure of a **COMPRESSED AIR PISTOL.**

If a **COMPRESSED AIR PISTOL** is used for drying it may be necessary to reduce the pressure.

Before functional testing, the device must be inspected for cleanliness and appropriately lubricated. To that effect, the motor systems should be cooled down. Ensure that "proper" lubricants are used for lubrication. **INAPPROPRIATE LUBRICANTS** can result in the motor systems becoming encrusted or even getting stuck. The manufacturer's instructions regarding the type of lubricant and its application, e.g. how to apply and how much, must be observed. Excess or dripping lubricant should be removed.

INAPPROPRIATE LUBRICANTS can result in the motor systems becoming encrusted or even getting stuck.

Caution: There are also motor systems that must not be lubricated.

FUNCTIONAL TESTING may have to be carried out by the user before the procedure.

FUNCTIONAL TESTING is performed according to the manufacturer's IFU, insofar as this is possible. If functional testing cannot be done in the RUMED because of a lack of equipment, it should be carried out by the user before the respective medical procedure.

Preparation for sterilization

Following successful functional testing, the motor system and accessories are stored and packed, as necessary, in a system tray.

Sterilization

Steam sterilization with a validated process is usually recommended for motor systems.

Only batteries approved for the **SELECTED STERILIZATION PROCESS** may be sterilized with this method.

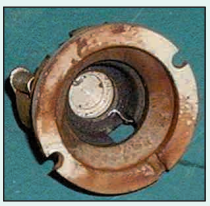
Caution: For battery powered systems make sure that only those batteries declared compatible with sterilization and with the **SELECTED STERILIZATION PROCESS** are sterilized. Otherwise, this can result in the destruction of the battery.

Allow motor systems to cool down to room temperature after sterilization. To prevent irreparable damage to the motors, they should be given enough time to cool down and must not be improperly cooled down by the user.

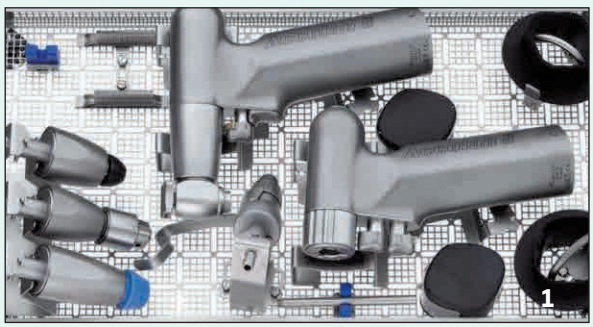
General instructions

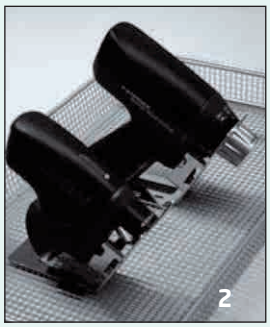
According to DIN EN ISO 17664, the manufacturers of motor systems must provide the user with details of at least one validated process to reprocess the motor systems.

Maintenance/servicing is specified by the manufacturers. If the systems are not serviced as specified, this can lead to poorer performance during use or to breakdown of the systems.



Figs. 3 to 5: Surface discoloration due to unsuitable detergents or water quality





Figs. 1 aud 2: Supports for automated reprocessing (Fig. 1: Aesculap factory photo, Fig 2: Synthes factory photo)